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FARMERS' BULLETIN 1121
United States Department of Agriculture

FACTORS

that make for

SUCCESS IN

FARMING

in the

SOUTH



THIS BULLETIN is designed to present, by pictures, charts, and brief text, some of the more important and fundamental factors that make for success on the Southern farm.

Its object is to arouse the interest of the farmer in these factors, so essential to success, and induce him to inquire further into the matter, with the idea of improving his own practice and management.

Contribution from the Office of Farm Management and Farm Economics
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Washington, D. C.

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FACTORS THAT MAKE FOR SUCCESS IN FARMING IN THE SOUTH.

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FARM RECORDS.

THE FARMER invests capital in land, labor, and equipment for the production of crops, of live stock, and of animal products. It is self-evident that to reach the highest return for time and capital expended he must use his land and equipment, and expend his labor and supplies, with the greatest efficiency and economy possible under his particular climatic, soil, and economic conditions, and according to the information available as to the practices best suited to that environment.

To determine whether he is managing his farm to the best advantage, it is desirable that he not only keep such records as will enable him to make an analysis of his farm business, but also that he compare notes with others to gain knowledge and efficiency from their experience.

These records may range from simple accounts to elaborate systems of bookkeeping, showing receipts, expenses, and inventories for the farm as a whole, or even to complete cost-account records for each individual enterprise on the farm.

The following summary of the business of a Southern farm will give a general idea of the nature of the facts that may be emphasized by keeping farm records.

Summary of a farm business.

Fixed capital in real estate (276 acres)	\$9,000
Working capital:	
Live stock	\$1,831
Implements and machinery	280
Feed and supplies	650
Cash to run farm	400
Total working capital	3,161
Receipts from—	
Crop sales	8,435
Live-stock sales	75
Live-stock product sales	225
Miscellaneous receipts	0
Increase in inventories	552
Total receipts	9,287
Expenses:	
Hired labor, including cropper	4,131
Family labor	0
Live-stock expense	385
Miscellaneous crop expense	1,487
Improvements, machinery, and repairs	235
Taxes and insurance	85
Total expenses	6,323
Farm income	2,964
Interest on capital	961
Labor income	2,003
Tilled acres	202½
Work animals	8
Acres per work animal	25½
Days of productive work per work animal	120
Yield per acre of cotton, pounds	375
Yield per acre of corn, bushels	20
Yield per acre of oats, bushels	50
Per cent tilled land in cotton	69
Per cent tilled land in corn	21
Per cent tilled land in oats	5

The farm receipts minus expenses make the farm income—the total amount earned by the farmer and his capital, except what the farm furnishes the family in the way of food, fuel, shelter, and other comforts.

It is customary to divide the farm income between the farmer and his capital by deducting interest on the capital from the farm income and assigning what is left to the farmer as his labor income. Another way is to make a fair estimate of the value of the farmer's time, and subtract this from the farm income, the remainder being regarded as the earnings of capital.

Either the farm income, the labor income, or the earnings on the investment may be used as a measure of success and efficiency in operating the farm. In this bulletin farm income has been used for this purpose.

FARM INCOMES VARY.

















VARIATIONS IN THE SIZE OF THE FARM INCOMES ON EIGHT INDIVIDUAL GEORGIA COTTON FARMS			
ACRES IN CROPS		FARM INCOME IN DOLLARS	
23		115	
21		599	
58		480	
59		924	
59		1440	
120		302	
120		805	
122		1670	

FIG. 1.—Farm incomes vary.

In a community of farms in Georgia, operated by owners the following range of variations in farm incomes occurred:

TABLE I.—Range of variations in a community of farms.

Number of farms.	Size of farms.	Range in variations in farm incomes.
9	1-mule farms	\$67 to \$620
23	2-mule farms	— 49 to +1,227
25	3-mule farms	114 to 1,379
18	4-mule farms	—236 to +3,013
19	5-mule farms	302 to 1,853
15	6-mule farms	66 to 2,644

WHY DO SUCH VARIATIONS OCCUR?

In the following pages some of the factors which tend to raise or lower the farm income and which influence success in farming are indicated by pictures, charts, and figures.

THE FARMSTEAD.

A well-planned farmstead, with a comfortable, well-arranged, attractive farmhouse, not too large or too expensive, with a near-by ample garden and well-planned barn, crib, stable, poultry house, and other necessary farm buildings, adapted in capacity and location to the character and size of the farm, will contribute in great measure to the welfare of the farm family and to the success of the administration of the farm business. A poorly-planned farmstead entails a waste of time and energy in performing many of the activities of the farm which might otherwise be expended in profitable production.

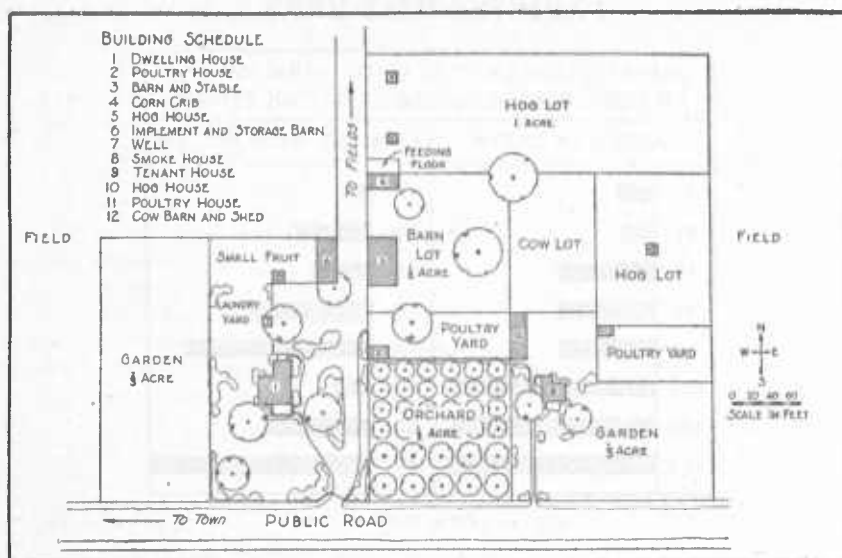


FIG. 2.--Suggested layout for Southern farmstead. (Grouping prepared by Division of Rural Engineering, Bureau of Public Roads.)

QUALITY OF BUSINESS.

Quality of business has a very important influence on the size of the farm income.

Quality is indicated by crop yields per acre, by returns per head of productive live stock, by the grade of the product, and by the number of days of productive work done per man and per work animal.

While the character of the soil and the climatic conditions have great influence on yields of crops and the production of live stock, quality may be influenced by cultural methods and by systems of farming.

CROP YIELD PER ACRE.

On the two farms, A and B (see fig. 3), the capital invested is only a little over 5 per cent in favor of farm B. The number of work animals is identical on the two farms. The number of tilled acres is practically the same. Farm B has only one acre more in cotton and three acres more in corn than Farm A.

The two farms are about as evenly matched as it is possible to find two farms when measured by capital invested, number of work animals, tilled acres, and acres in each of the principal crops.

However, when compared as to quality of business measured by crop yields per acre, we find that Farm B produced 109 pounds more

lint cotton per acre than did Farm A, or about 50 per cent more. The corn yield, not shown in the figure, also was about 30 per cent larger on Farm B.

The cotton on Farm B graded higher than that on Farm A and sold for $1\frac{1}{2}$ cents more per pound.

The better yield per acre and the higher grade contributed largely to making receipts of Farm B 70 per cent larger than those of Farm A.

While total current expenses were practically the same on each farm, farmer B showed a higher quality of management by spending more

INFLUENCE OF YIELD PER ACRE ON FARM INCOME ON TWO GA. COTTON FARMS

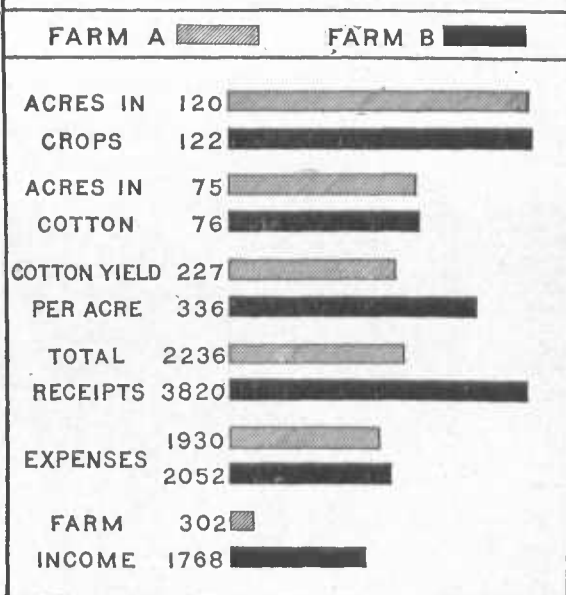


FIG. 3.—Influence of yield per acre on farm income. (The farm income represents the combined earnings of the farmer and his capital, exclusive of food, fuel, and shelter furnished by the farm to his family.)

Farm A.		Farm B.	
Capital invested ---	\$5, 814	Capital invested ---	\$6, 145
Work animals -----	5	Work animals -----	5
Acres in crops-----	120	Acres in crops-----	122
Acres in cotton-----	75	Acres in cotton-----	76
Acres in corn-----	37	Acres in corn-----	40

INFLUENCE OF YIELD OF COTTON PER ACRE ON PROFITS PER ACRE AS FOUND ON 143 FARMS IN BROOKS COUNTY, GEORGIA BEFORE THE RECENT WAR

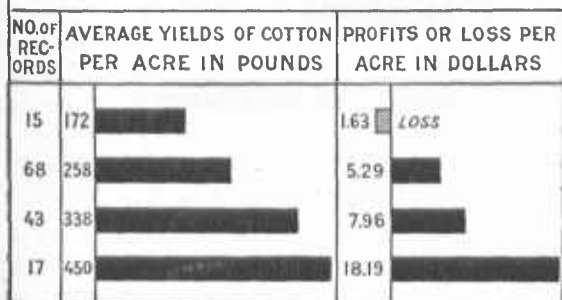


FIG. 4.—Influence of yield per acre on profits per acre.

money for fertilizers to increase yields and less for labor than did farmer A.

The effect of increased yield and higher grade of product is conclusively shown in the farm income—receipts minus expenses. The farm income on Farm B was more than five times as large as on Farm A.

That variations in yield per acre and grade of product cause variations in the farm income is shown in figures 3 and 4.

PRACTICES THAT HELP TO MAINTAIN AND INCREASE CROP YIELDS.

GROWING COWPEAS.



FIG. 5.—Growing cowpeas for seed and fertility is profitable both directly and indirectly.

COTTON AFTER COTTON AND COTTON AFTER COWPEAS	
YIELD OF COTTON PER ACRE IN POUNDS	
COTTON AFTER COTTON	279
COTTON AFTER COWPEAS	511

FIG 6.—Effect of cowpeas on cotton yield. (In both cases 336 pounds of fertilizer were applied to the crop.)

GROWING VELVET BEANS.



FIG. 7.—Do velvet beans increase the quality of the business? (See figure 8.)



OATS AFTER CRAB GRASS AND OATS AFTER VELVET BEANS (ALABAMA EXP. STA. BUL. 120)		
SYSTEMS OF CROPPING	YIELD OF OATS PER ACRE IN BUSHELS	
OATS AFTER CRAB GRASS	7.1	
OATS AFTER VELVET BEANS	28.6	

FIG. 8.—In this case velvet beans quadrupled the oats crop. (One hundred pounds of acid phosphate were applied in each case.)

OTHER LEGUMES.

Other legumes such as soy beans, peanuts, vetch, bur clover, les-pedeza, red, alsike, and sweet clovers, and Canada field peas, grown as catch crops or winter cover crops or as a part of the regular cropping system, are all useful in maintaining or increasing fertility and thus influencing the quality of the business and the farm income.

On a farm in Caroline County, Va. (Farmers' Bulletin 924), the regular practice had been to grow corn on the land one year in three and to allow each field to rest during the other two years. The resting

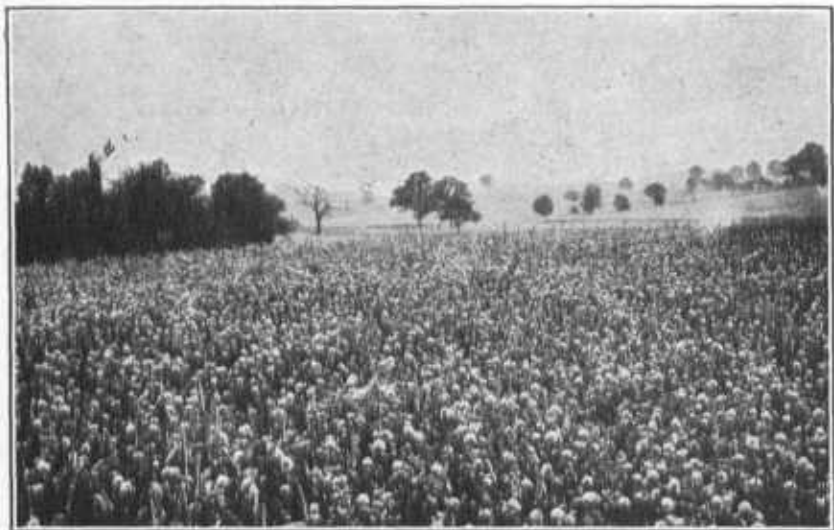


FIG. 9.—Red clover, the old stand by as a feed and fertility plant, is a great quality and income maker.



FIG. 10.—Peanuts grown between the corn rows provide hog feed and increase fertility.
(See Farmers' Bulletin 985.)



FIG. 11.—The soy bean, a wonderful fertility maker, showing nodules on the roots. Similar nodules of varying size occur on the roots of all legumes. It is through these nodules that the legumes, working in cooperation with nitrogen-gathering germs that live in the nodules, are able to accumulate free nitrogen from the air. This makes it possible for the farmer who makes a practice of growing legumes to increase with economy the quantity of his crop and live-stock production, and by so doing add to the farm income.

process was to allow weeds to grow up and thus accumulate fertility for another crop of corn. With this system of cropping, the yield of corn ranged generally from 15 to 18 bushels.



FIG. 12.—Crimson clover planted in a pear orchard as a winter cover crop and fertility maker.

Figure 14 shows the crop growth on a part of the farm while still under this system.

The improvement of the soil on this farm began by first planting one of the poorest fields with cowpeas. The cowpeas were cut for hay and the stubble disked and seeded to crimson clover. The following spring the crimson clover crop was turned under and the field planted with corn. At the last working of the corn crimson clover was again sown. The following spring the process was repeated by turning under the crimson clover and



INFLUENCE OF CRIMSON CLOVER ON CORN YIELDS ON A VIRGINIA FARM. (FARMER'S BULLETIN 924)		
SYSTEMS OF CROPPING	CORN YIELDS PER ACRE IN BUSHELS	
CORN EVERY THREE YEARS AFTER TWO YEARS OF WEEDS	18	
CORN AFTER FIVE YEARS OF CORN AND CRIMSON CLOVER EVERY YEAR	50	

FIG. 13.—Results of growing crimson clover for increasing the corn yield on this Virginia farm.

planting corn again on the same land. This practice was continued for 5 years. The third year the yield of corn was about 40 bushels to the acre and the fifth year the crop made a yield of 50 bushels to the acre.

Figure 15 shows the change that has taken place under this method of cropping.

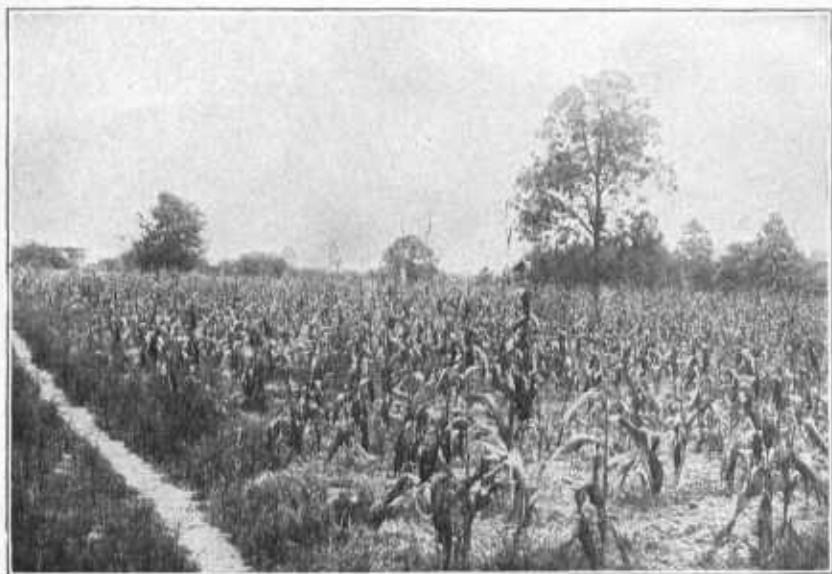


FIG. 14.—Yield too low to pay cost of production. (Farmers' Bulletin 924.)



FIG. 15.—A 50-bushel crop after crimson clover. Same field shown in figure 14. (Farmers' Bulletin 924.)

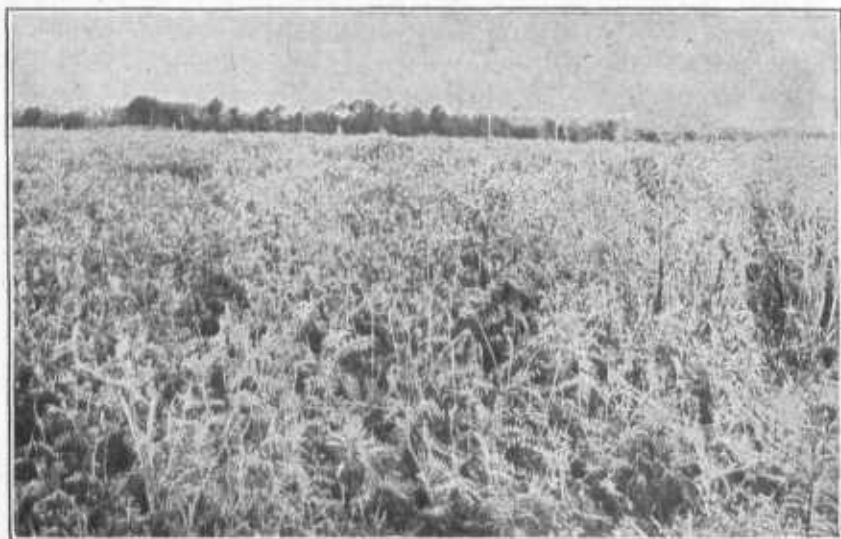


FIG. 16.—Vetch, a winter legume, a good hay plant and a fertility and quality maker. Not grown as generally as its value would warrant. (Farmers' Bulletin 924.)

HARVESTING PRACTICES.

Harvesting practices influence directly the amount of the product secured, and therefore influence the farm income. For instance, delay

in harvesting legumes for hay may result in loss of the leaves, thus reducing the amount of hay. Overcuring may have the same result. When grains are kept standing too long shattering diminishes the yield. Soy beans shatter badly if harvested when overripe and dry. Pulling corn fodder diminishes the yield of the grain.

INFLUENCE OF DELAYED PICKING ON YIELD OF COTTON PER ACRE (UNIVERSITY OF ARKANSAS, CIR. 47)		
DATE OF PICKING	YIELD PER ACRE, POUNDS OF SEED COTTON	
	LBS.	BOYKIN
OCT.1	1118	
NOV.1		
JAN.21	998	
		EXPRESS
OCT.1	1606	
NOV.1		
JAN.21	1379	
		STATION PRICE
OCT.1	1326	
NOV.1		
JAN.21	1224	

FIG. 17.—How time of picking influences yield of cotton.

Figure 17 shows graphically the loss in weight of cotton caused by delayed picking.

SELECTION AND CARE OF SEEDS.

A factor that has an important influence on yields is the practice of the farmer or the seed grower in harvesting and caring for the seed. Many farmers can increase the quality of their farm business by better seed selection and care.

Seed should be selected during or before regular harvest, from strong prolific mature plants, and should be properly cured and cared for till planting time. Testing for germination is not enough. A fine stand of plants may be obtained from inferior seed from non-prolific plants, but the resulting yields will not be the best possible. Figure 18 shows two men gathering seed corn in the field. They are searching for seed ears from plants that have made good yields. Seed corn selected in this manner, properly cured and kept dry, will not fail to produce a good stand of strong prolific plants.

One farmer selected seed corn in the field and cured and cared for half of it by approved methods. The other half he placed in a sack in the corn crib with the feed corn. The properly cured seed produced 5 bushels per acre more than the seed cured in the corn crib. (Bureau of Plant Industry Circular 95.)

The same principle followed out in the selection and care of seeds of other crops will not fail to have a good influence on the yield of the crop and the farm income.

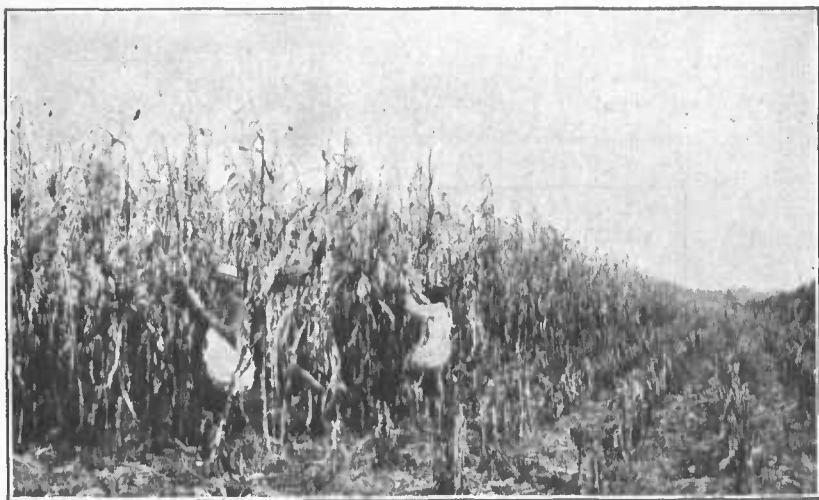


FIG. 18.—Selecting seed corn in the field.

INFLUENCE OF SYSTEMS OF FARMING ON YIELDS PER ACRE.

The farms for which yields are presented in figure 20 are adjoining, and originally had the same crop-producing power. Farm No. 1 has been under continuous grain cultivation and has never received any farm manure or other humus-forming materials. The land has been reduced in wheat-producing power from 25 to 8 bushels per acre. Farm No. 2 has received regular and liberal dressings of

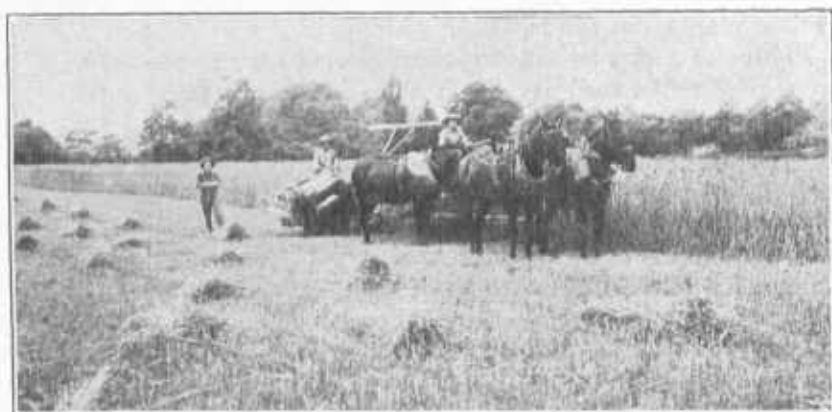


FIG. 19.—Continuous grain culture—decreasing yields.

manure and has produced wheat, corn, oats, timothy, and clover in rotation. There has been no apparent decline in crop yields. (University of Minnesota Experiment Station Bulletin 53.)

On typical cornbelt prairie soil in Illinois that yielded over 70 bushels of corn per acre when brought under cultivation (see fig. 22),

INFLUENCE OF SYSTEMS OF FARMING ON WHEAT YIELDS ON TWO MINNESOTA PRAIRIE FARMS. (UNIV. OF MINN. EXP. STA. BUL. 53)		
SYSTEMS OF FARMING	WHEAT YIELDS PER ACRE IN BUSHEL	
(FARM 1) 35 YEARS OF CONTINUOUS GRAIN	8	
(FARM 2) 35 YEARS OF ROTATION & MANURE	25	

FIG. 20.—Effect of rotation and manure on wheat yields.

29 years of continuous corn culture reduced the yield to 27 bushels; on like soil a system of corn, oats, and clover in rotation, plus manure from live stock, not only maintained the original yield but increased it to 96 bushels per acre. (University of Illinois Experiment Station Bulletin 125.)

An occasional Northern example has been used, as will be noted on pages 16 to 19, to illustrate a principle when no clear-cut Southern records were at hand. The principles taught, however, hold good for all sections.

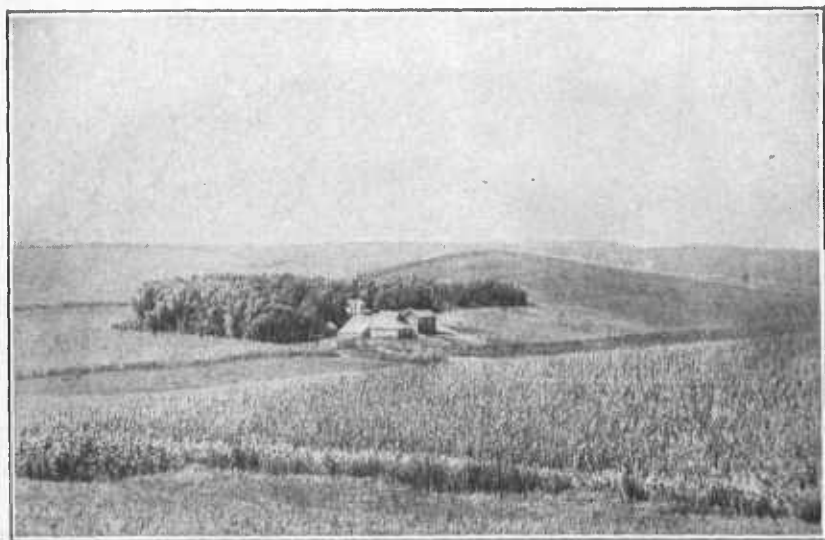


FIG. 21.—Grain in rotation on prairie farm.

INFLUENCE OF SYSTEMS OF FARMING ON YIELD OF CORN PER ACRE ON TYPICAL CORN-BELT PRAIRIE SOIL IN ILLINOIS. (UNIV. OF ILL. EXP. STA. BUL. 125.)		
SYSTEMS OF FARMING	CORN YIELDS PER ACRE IN BUSHEL	
ORIGINAL PRAIRIE	70	<div></div>
No. 1) 29 YEARS CONTINUOUS CORN	27	<div></div>
No. 2) 13 YEARS OF CORN IN ROTATION PLUS MANURE	96	<div></div>

FIG. 22.—Rotation and manure give bigger yields than virgin prairie soil.

PRACTICES THAT LOWER THE GRADE OF THE PRODUCT.

Practices that lower the grade or quality of the product reduce the farm income.



FIG. 23.—Delayed cotton picking lowers the yield and the grade of the product.

Figure 24 shows graphically the influence of delayed picking on the grade and value of cotton.

Comparing figure 24 and figure 17, page 14, it will be seen that delayed picking of this cotton resulted in a reduced yield and a lowering of the grade. The average money loss on equal acreages of these three crops, due to delaying picking till January, was more than one-third, or \$57 per acre, on the 1918 crop.

Ten acres of this cotton picked at the proper time in the

INFLUENCE OF DELAYED PICKING ON GRADE AND VALUE OF COTTON		
DATE OF PICKING	GRADE	ACRE VALUE OF LINT & SEED
OCT 1	STRICT MIDDLING	\$152
NOV 1	STRICT LOW MIDDLING	
JAN. 21	GOOD ORDINARY	106
BOYKIN		
OCT. 1	STRICT GOOD MIDDLING	193
NOV. 1	MIDDLING	
JAN. 21	MIDDLING BLUE STAINED	112
EXPRESS		
OCT. 1	STRICT MIDDLING	165
NOV. 1	STRICT LDW MIDDLING	
JAN. 21	MIDDLING BLUE STAINED	121
STATION PRICE		

FIG. 24.—Delayed picking lowers grade and reduces return.
(Compare with figure 17.)

fall would return as much money as 15 acres picked in January, and the additional five acres could be used to produce food and feed and other crops that would not interfere seriously with the cotton picking.

Late cutting of hay usually results in lower quality, owing to the conversion of nutrients into less digestible forms or the transfer of nutrients from stem and foliage to root and seed, the latter often shattering out during harvest, leaving a hay of low grade. The same practices may result in loss of foliage. This loss of leaves may also be caused by overcuring the hay and thus lowering its grade.

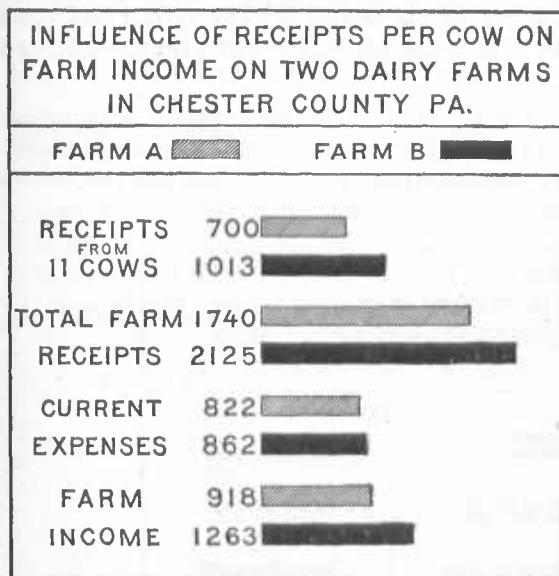
Corn stover left standing till the blades dry up or are frosted is of inferior quality to that cut at the proper time.

Truck and fruit crops may deteriorate in quantity and quality by late harvesting. Too early harvesting may produce a low grade as well as a small yield.

Other crops and products also suffer deterioration in yield and value when more is planted than can well be cared for. Why not play safe? Why not harvest only high-grade products by limiting the acreage to what can be well cared for and harvested at the proper time?

INFLUENCE OF QUALITY IN DAIRY COWS ON INCOME.

Figure 25 shows some facts about two Pennsylvania dairy farms.



These farms are identical in farm area, number of work animals, and number of dairy cows, and vary only slightly in crop area and total current expenses.

Farm B, however, shows an increase of \$28 in receipts per cow, or nearly 44 per cent over Farm A, due to better cows or better feeding and care, or a combination of the two—in other words, better quality of business. This higher quality of business is reflected directly in

FIG. 25.—Over \$300 difference in income, attributable mostly to difference in yield per cow.

Farm A.		Farm B.	
Farm area	80	Farm area	80
Crop area	46	Crop area	43
Work animals	3	Work animals	3
Dairy cows	11	Dairy cows	11



FIG. 26.—High-yielding cows are essential to profitable dairying.

increased total receipts and in a farm income larger by more than one-third.

One of the most important of the practices that influence the quality of the dairy business is the testing of the individual cows for quantity of milk and butter fat produced, and keeping a record of the findings.

The first year of such testing and record keeping for a Virginia dairy herd of 42 cows (prior to the war) revealed the facts shown in figure 27. Practically one-fourth of this herd was not producing enough milk to pay expenses.









WHAT THE FIRST YEAR TEST OF A VIRGINIA DAIRY HERD REVEALED				
NUMBER OF COWS	MILK PER COW IN POUNDS		VALUE OF MILK IN DOLLARS	
12	2738		57	
10	4380		91	
10	5036		105	
10	6024		126	

FIG. 27.—Showing that the best 10 cows gave more than twice as much milk as did the poorest 12.

EFFICIENCY IN THE USE OF LABOR.

Another important factor influencing the quality of the business and the size of the farm income is the efficiency with which the labor of men and animals is utilized. Some farmers reach a high degree of skill in so handling men and mules as to get large returns for the labor expended.

Figure 28 shows graphically the utilization of mule power on two cotton farms with practically the same number of crop acres. Farmer A used five mules to work

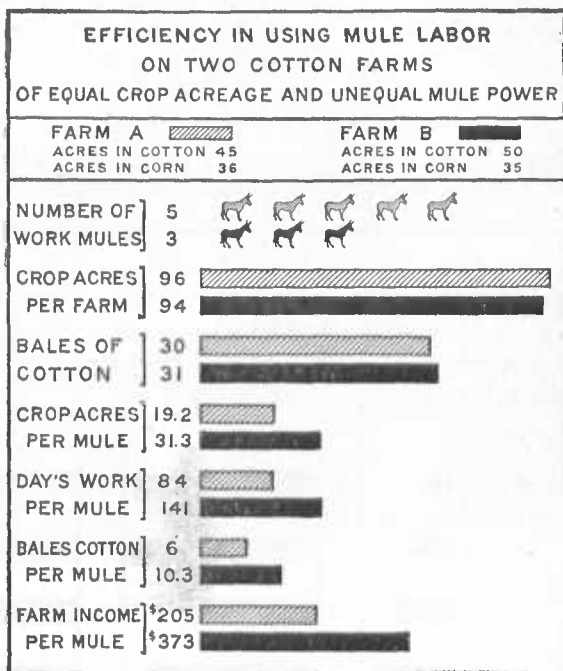


Fig. 28.—Three mules do more work than five in this case.

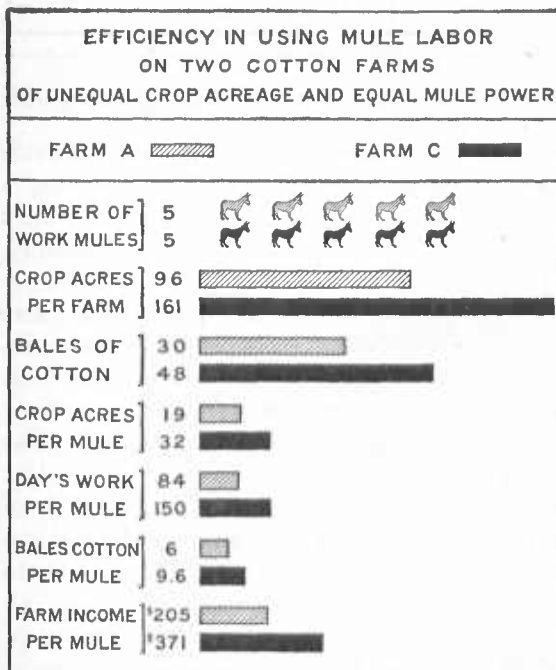


Fig. 29.—One 5-mule outfit covers 65 more crop acres than another.

the 96 acres of crops, while farmer B worked 94 acres with three mules. The three-mule farm worked over 12 acres more per mule, put in 57 more productive days per mule, and earned \$168 more farm income per mule.

In figure 29 farmer C, a five-mule farmer, by putting his five-mule equipment on a larger farm than did farmer A in figures 28 and 29, was able to handle them with practically the same efficiency as his neighbor, farmer B (see fig. 28), handled his three

mules, and therefore earned a much larger income. Farmer C worked 13 acres more per mule than farmer A, put in 66 more productive days per mule, and earned \$166 more farm income per mule.

Farmer A ranks low when measured by efficiency in utilizing mule labor.

Figure 30 shows graphically for 159 farms in Georgia that an increase in the number of acres per mule and productive day's work per mule have a tendency to increase the farm income.

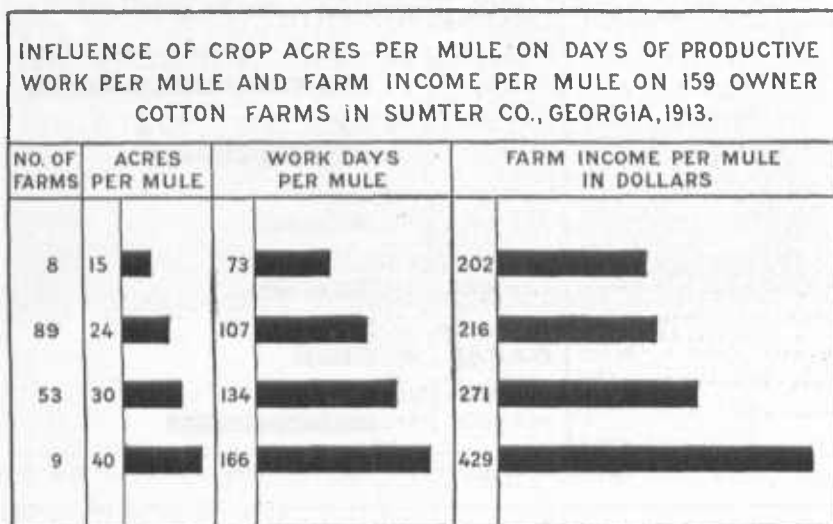


FIG. 30.—Relation between acres per mule and day's work per mule, and farm income.

LABOR MAY BE SAVED BY THE USE OF IMPROVED MACHINERY.

Differences in practice in the use of implements make considerable difference in the labor requirements and labor cost of growing a crop. Figure 32 shows the differences in the average amounts of man labor required to produce cotton, corn, and oats in Sumter County, Ga., and Ellis County, Tex.

In Sumter County, Ga., though the farmer and his laborer sometimes drive two horses or mules, one-horse implements are generally used in preparing the ground, planting, and cultivating. In Ellis County, Tex., the farmer and his helper drive from two to four horses or mules and use improved implements and machines. The Texas man averages one trip across the field in throwing up a plant bed. The Georgia man will average five trips. The Texas man cultivates both sides of the row and also the middle at one trip across the field. The Georgia man makes two or three trips to accomplish the same end. The Georgia man with his one-horse implements expends twice as much man labor on the three crops represented in the figure as does the Texas man.

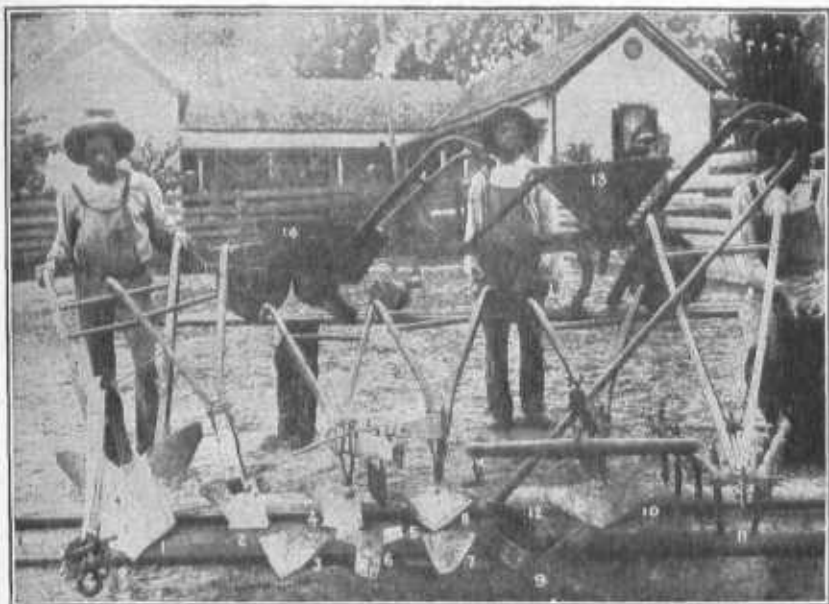


FIG. 31.—Some types of implements used in growing cotton; (1) middle buster or llster; (2) Georgia stock with half shovel or turning plow; (3) small solid sweep; (4) Georgia stock with half shovel and fender attached for use in barring off; (5) 10-inch heel sweep or heel scrape; (6) diamond scoter; (7) broad shovel; (8) Georgia stock with solid sweep and 18-inch heel sweep attached; (9) 18-inch heel sweep; (10) Georgia stock with 18-inch solid sweep attached; (11) one-horse spike tooth or narrow tooth cultivator; (12) cotton hoe; (13) fertilizer distributor; (14) cotton planter. With the exception of No. 1, the middle buster, and No. 12, the hand hoe, these are all one-man, one-mule implements. (Yearbook Separate 377.)

**COMPARISON OF RELATION OF IMPROVED
TILLAGE MACHINERY TO MAN LABOR COST
ON CROPS IN SUMTER CO., GEORGIA AND
ELLIS CO., TEXAS.**

(DEPT. BUL. 659 AND FARM MANAGEMENT CIR. 3)

LOCATION		MAN DAYS PER ACRE	
		COTTON	
GEORGIA	11¼		
TEXAS	5½		
		CORN	
GEORGIA	3¾		
TEXAS	2		
		OATS	
GEORGIA	1½		
TEXAS	¾		

FIG. 32.—Man days per acre reduced by half through use of improved machines and big teams.



FIG. 33.—One man with two horses and a riding cultivator cultivating both sides of a row at one trip and cultivating not only lengthwise of a field but also across a field planted by one man with a two-horse, two-row check row planter. Time was saved by this practice as compared with that in figure 36, both in planting and in cultivating the crop. (Other methods of making labor more efficient by the use of machinery and other devices are described in Farmers' Bulletin 989.)

Figure 34 shows graphically how the cost of cultivating corn was lowered on an Alabama farm by using a check-row planter. Farmers' Bulletin 310, in describing the farm, says:

"When the rows were laid out with the contour of the land and cultivated only one way the cost of cultivation averaged \$1.38 per acre and the cost of hoeing \$0.70 per acre. When the corn was check-rowed and cultivated both ways the average cost of cultivation

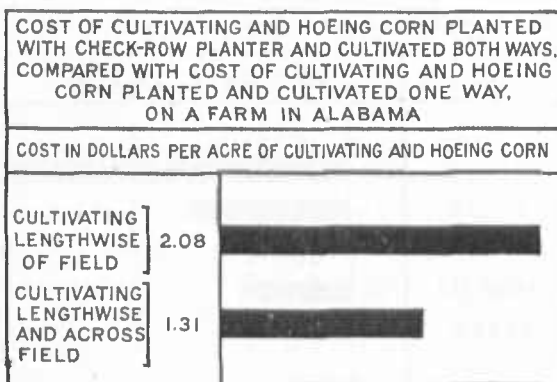


FIG. 34.—It pays to cultivate thoroughly.

and hoeing was reduced to \$1.10 and \$0.21, respectively, a saving of 20 per cent in the cost of cultivation and 70 per cent in the cost of hoeing."



FIG. 35.—A labor-saving implement. A two-horse four-shoveled cultivator with small sweeps instead of shovels, extensively used for the tillage of cotton and corn in Texas and Oklahoma and some other parts of the Cotton Belt. (Department Bulletin 511.)



FIG. 36.—Two men and two mules, with one-horse cultivators, cultivating one side of a row at a time, of a crop planted with a one-man, one-horse, one-row planter. (Compare with figure 33.)

SAVING MAN AND HORSE LABOR BY GRAZING DOWN CROPS.



FIG. 37.—On many farms man and horse labor may be saved at harvest time by grazing down part of the feed crops of the farm with hogs, cattle, or sheep. This practice not only saves labor and is of great advantage in time of scarcity of labor, but also enables the farmer to produce live stock at lower cost than when the crops are harvested by hand and machine and then fed to the stock. (See Farmers' Bulletin 1008.)

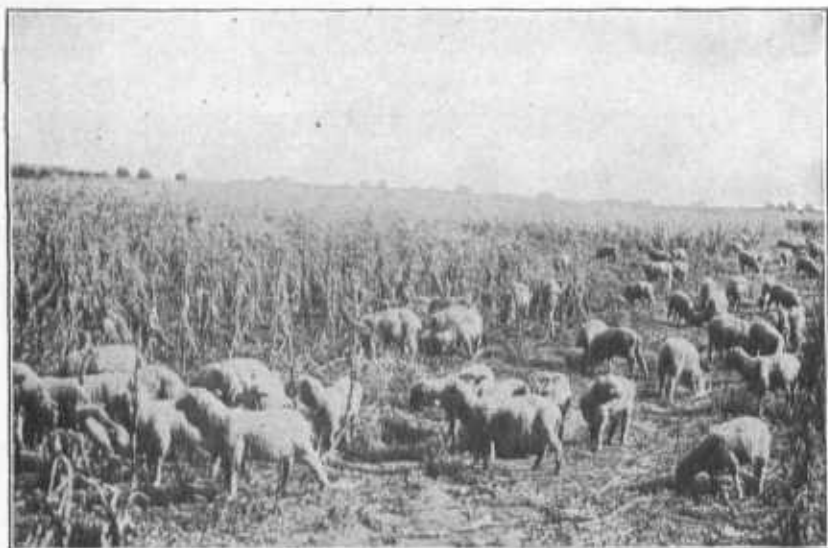


FIG. 38.—The sheep shown above have cleaned up the soy beans which were planted in this corn at the last working and are now beginning on the corn. They were left in the corn until the entire crop was harvested, at which time they were fat and ready for market. (Farmers' Bulletin 1008.)

UTILIZING UNTILLABLE AND WASTE LAND.



FIG. 39.—On many farms are found rough, rocky hillsides or fields or other waste land not suitable for tillage purposes. These fields can be made to add something to the farm receipts by using them as pasture.

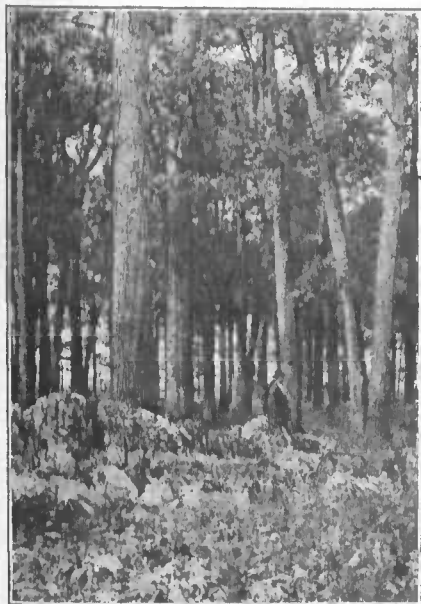


FIG. 40.—Forest growth is profitable on rough, steep, and wet lands, poor soils, and "waste" corners about the farm. By proper handling, the quantity and quality of the timber, as well as the money returns from woodlands, can be substantially increased: (a) Mature oak which the farmer has let stand on a piece of very rocky farm land. (b) Young slash pine growing rapidly on wet land and of high value for turpentine and pulpwood or fuelwood. If thinned the larger trees will soon yield saw logs.

SIZE OF THE BUSINESS.

The size of the farm business naturally has a direct influence on the amount of the farm income.

The size of the business is usually measured by the number of acres used, the number of animals from which profits may be earned, the number of productive days' work the farm furnishes for men and work animals, and the amount of working capital.

Figure 41 shows the influence of the size of the farm business as measured by tilled acres and productive days' work per man and per horse on the farm income on two Georgia cotton farms.

The number of tilled acres per work animal, the per cent of land in cotton, and the yield of cotton per acre are practically the same for the two farms, but farm B has a little more than three times as many tilled acres and furnishes a little more than three times as many productive days' work for man and horse than does farm A.

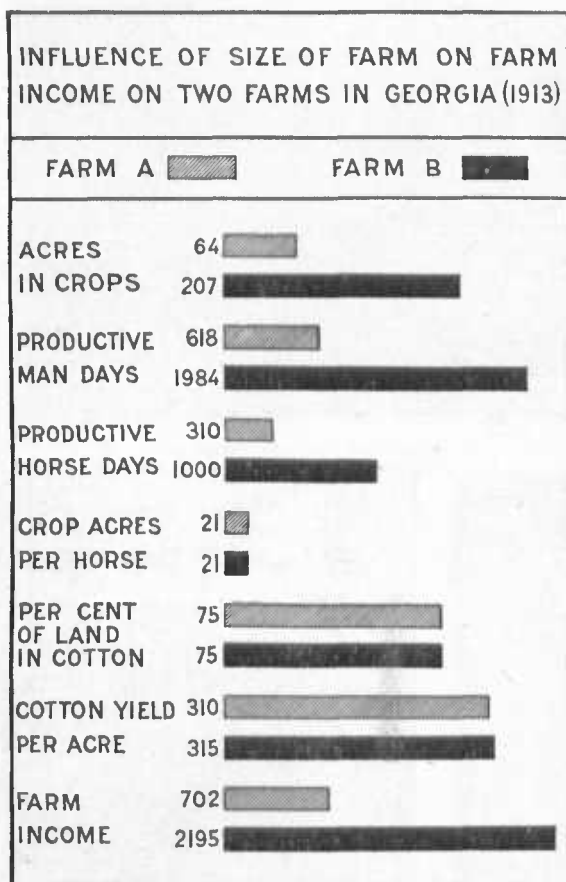


FIG. 41.—Equal in efficiency, but far from equal in farm income.

This same proportion shows directly between the two farm incomes, that of farm B being a little over three times as large as that of farm A.

Studies of large groups of farms in many parts of the country indicate that the farms of larger acreages uniformly earn larger incomes than the smaller farms of the same type.

Figure 42 shows the relation of size of farm to income on 147 owner farms in Sumter County, Ga.

Increasing the size of the farm may result in greater efficiency in the use of labor on the farm. Figure 30 on page 21 shows how the larger farm (C) used its five mules more efficiently on 161 acres than the smaller farm (A) used five mules on 96 acres.

Of course the larger farm does not always have the larger income, even when the two farms compared are of the same type. For instance, turning back to figure 1, on page 5, it will be seen that the farm with 21 acres has a larger income than the farm with 58 acres. It will also be seen that the two farms of 59 acres each have farm incomes larger than either of the farms with 120 tilled acres. This is because the quality of business on these smaller farms was sufficiently higher to overcome the advantage of more acres on the large farms.

A larger income on a larger farm may not indicate any better farming. In figure 41, page 28, farm B, though three times as large, and having a farm income three times

as large as farm A, is not farmed any better than the smaller farm. Farmer B has more capital and may have greater skill in handling large numbers of men and teams.

A large farm may show a larger income than a smaller farm with higher quality of business, simply because the larger farm, with a lower quality of business and a smaller income per acre or per head of productive live stock, has been able so to multiply smaller returns per unit as to exceed the farm income of the more efficiently managed smaller farm. For example, farm B, in figure 3, page 7, made a farm income of \$14.50 per acre compared with a farm income of \$10.60 per acre of farm B, figure 41, yet the latter had enough acres more than the former to make its total farm income \$427 larger.

The size of the business and the farm income may be increased not only by adding to the acres used or to the numbers of productive animals, but also by raising the quality of the management.









RELATION OF SIZE OF FARM TO FARM INCOME ON 147 OWNER FARMS IN SUMTER COUNTY, GEORGIA .				
NO.OF FARMS	AVERAGE CROP ACRES PER FARM		AVERAGE FARM INCOME IN DOLLARS	
25	34		288	
41	74		626	
40	123		1147	
31	194		2184	

FIG. 42.—The larger the farm, the greater the income.
(Figures for 1913.)

ORGANIZATION OF FARM ENTERPRISES.

The relation which the principal enterprises bear to each other in magnitude has a strong influence on the efficiency with which the business can be conducted, and therefore on the size of the farm income. (See Fig. 43.) In figure 43 two cotton farms are compared on the basis of organization of the crop land.

The farms have the same amount of crop area, and the yields per acre of the two principal crops, cotton and corn, were somewhat in favor of farm A. The expenses on the two farms were very nearly equal, but farm B had a farm income nearly three times as large as

that of farm A, due very largely to a better organization and distribution of the crop enterprises. After providing for the farm needs, most of the remaining crop land was put into cotton, the principal commercial crop of the region.

The operator of farm A sacrificed too much cotton for less valuable crops.

In figure 44 are given the average relative sizes of the crop enterprises on some of the more
















PERCENTAGES OF CROP AREA IN CROP ENTERPRISES ON TWO FARMS IN SUMTER COUNTY, GEORGIA 1913		
CROP ENTERPRISES	FARM A	FARM B
COTTON	18 % 	53 % 
CORN	30 % 	37 % 
SMALL GRAIN	22 % 	6 % 
COWPEA HAY	17 % 	
PEANUTS	8 % 	2 % 
MISCELLANEOUS	5 % 	2 % 
EXPENSES	\$1366 	\$1281 
FARM INCOME	416 	1118 

FIG. 43.—A contrast in farm organization.

Farm A.		Farm B.	
Crop acres-----	94	Crop acres-----	94
Cotton per acre-----	325	Cotton per acre-----	310
Corn per acre-----	14.3	Corn per acre-----	11.4

profitable one to six mule farms in Sumter and Brooks Counties, Ga. It will be seen that farm B (fig. 43) approaches quite closely in organization to the average of the 30 profitable farms in Sumter County.

A marked difference will be noticed in the organization in the two counties. In Sumter County, after making ample provision for the farm needs, the remainder of the land is devoted largely to cotton, the most important commercial enterprise. In Brooks County the soil is thinner and it is necessary to pay particular attention to the maintenance of soil fertility, so a system has been developed which gives a smaller relative acreage to cotton and pays particular attention to the legume feed crops and hays. Besides the regular peanut crop, peanuts are planted between the corn rows on about half the corn area.

To each mule these Brooks County farms carried an average equivalent of three mature cattle and sixteen 200-pound hogs, including two brood sows. Among the important miscellaneous crops on the farms are watermelons, sweet and Irish potatoes, and sugar corn.

It is not intimated that these systems of cropping are the best that could be devised for these farms or for the communities represented, but they were evidently better than the average, in that they yielded comparatively high returns for the use of land, working capital and labor.

These systems will change as conditions change. Indeed, the advent of the boll weevil and the high price of hogs has already started in Sumter County a change in the direction of the Brooks County system.

The point to be emphasized here is that for each farm community and for each type and size of farm there are certain combinations of enterprises that admit of a more efficient and profitable handling of the business, under average











PERCENTAGES OF CROP AREA IN CROP ENTERPRISES ON SOME OF THE MORE PROFITABLE 1 TO 6 MULE FARMS IN SUMTER AND BROOKS COUNTIES, GEORGIA (PRE-WAR)		
CROP ENTERPRISES	AVERAGE FOR 30 PROFITABLE FARMS IN SUMTER COUNTY	AVERAGE FOR 30 PROFITABLE FARMS IN BROOKS COUNTY
COTTON	54% 	27% 
CORN	31% 	41% 
SMALL GRAIN	9% 	16% 
PEANUTS	2.4% 	6% 
MISCELLANEOUS	3.6% 	10% 

FIG. 44.—Acreage in different crops on profitable southern farms.

climatic and economic conditions than do any others that have been tried thus far. The efficient adjustment or organization of the farm enterprises along these more profitable lines depends on the following factors:

1. The live stock and acreages necessary to supply the family and farm needs.
2. The fertility of the land.
3. The economic importance of enterprises adapted to the region, particularly as to market demand and the relation of prices to returns for labor and material expended.
4. The seasonal labor requirements of the enterprises.
5. The supply of labor and its cost.
6. The topography of the farm.
7. The size of the farm.
8. The advent of injurious insects and plant diseases.

Some of these factors are known to every farmer; some must be weighed in the light of the accumulated experience of the community. All that the farmer needs to know about the others can be gleaned from a well-planned and well-kept set of farm records.

